

Chemicals Policy and Product Management

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Moving Towards Chemicals Policy

1970s-1980s	Pollution Control and Waste Management
1980s-1990s	Pollution Prevention and Toxics Reduction
2000s	Chemicals Policy and Product Management

Chemicals Policy

“Seeking Safer Chemicals”

New International Chemicals Policies

- Denmark: Danish Chemicals Policy
- Sweden: A Sustainable Chemicals Policy
- Netherlands: Strategy on the Management of Substances
- Germany: Product Chain Chemicals Policy
- International: Stockholm Convention (POPs)
Rotterdam Convention (PIC)
Strategic Approach to
International Chemicals
Management (SAICM)

European Union

“REACH” Directive

- **Registration** - Notification and submission of data on all industrial chemicals used over one ton per year by 2012
- **Evaluation** - Assessment by Governments of all substances used over 100 tons per year
- **Authorization** - Requires use permits for High Hazard Substances (POPS, PBTs, VPVBs, CMR substances)
- **Chemicals** - Covers all new & existing chemicals

State Chemicals Initiatives in the United States

1986	California “Proposition 65”
1990-94	State Pollution Prevention Laws (32 states)
1998-2004	Mercury in Products Laws (10 states)
2002	Washington’s “PBT Elimination Strategy”
2003-2004	Brominated Flame Retardant (PDBE) Laws (California, Maine, Hawaii, Michigan)
2004 ->	State Chemicals Management Policies (Maine, Massachusetts, California?)

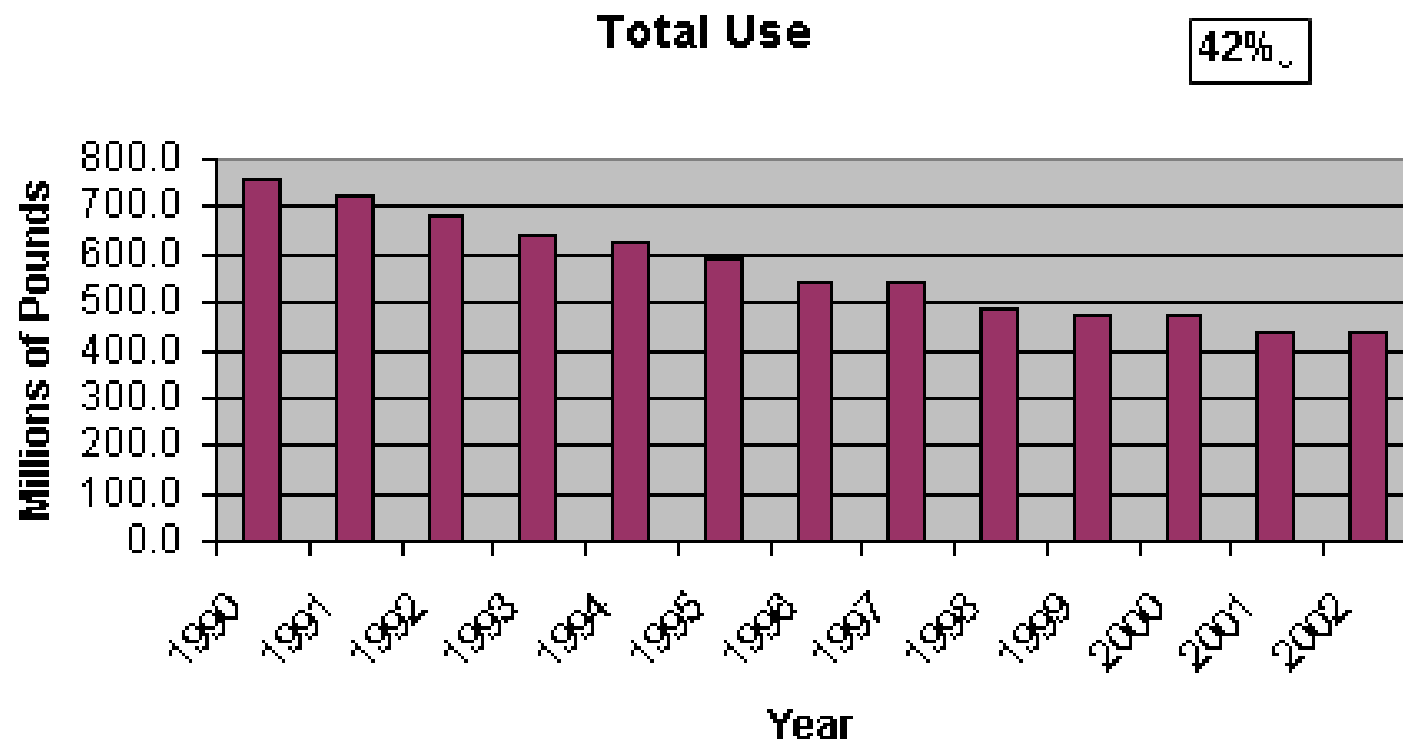
Massachusetts Toxics Use Reduction Program

- Designed to reduce the use of hazardous chemicals and generation of hazardous wastes
- Covers some 500-600 industrial facilities in Massachusetts over a 15 year period
- Requires industrial managers to plan for changes in chemicals, technologies or management of production processes
- Requires annual reporting on progress and chemical use

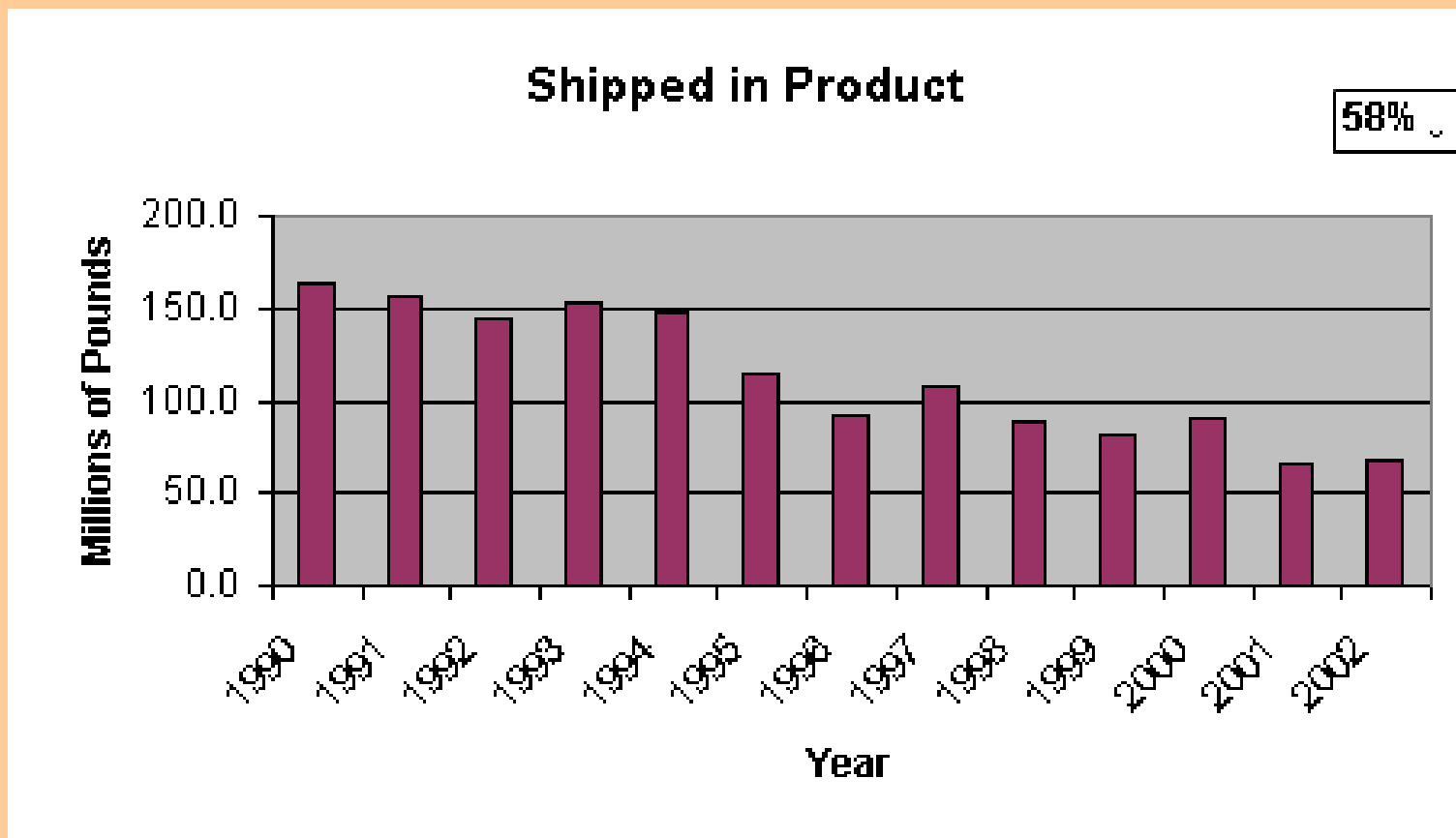
TURA Agencies

- **Department of Environmental Protection**
 - Collects data and fees and provides enforcement
- **Office of Technical Assistance**
 - Provides on-site, confidential technical assistance
- **Toxics Use Reduction Institute,
University of Massachusetts Lowell**
 - Provides research, testing, training and public education

Trends in Toxic Chemical Use 1990 -2002



Trends in Toxic Chemicals Shipped as Products, 1990-2002



Aspects of New Chemicals Policy

- Considers classes of chemicals
- Considers chemicals comprehensively in production, products and wastes
- Incorporates a precautionary approach
- Focuses on hazards, not risks
- Seeks to eliminate certain chemicals
- Encourages safer substitutes
- Drives “green chemistry” and innovation in chemistry

Advancing Stewardship To Promote Chemicals Policy

“Closing the Loop”

Closing the Loop Drives Toxics Reduction

- Product take back increases incentives to reduce toxics in product design
- Product collection and recycling reduces volume of new toxic chemical production
- Product recycling encourages toxic chemical elimination
- Producer responsibility encourages better management of chemicals in end-of-life products

Three Types of Stewardship

Stewardship means taking responsibility for resource management

1. Product stewardship programs
 - carpet, pesticides, electronics, etc.
2. Chemical stewardship programs
 - chemical management services
3. Community stewardship programs

1. Product Stewardship

- Developed from European “take back” programs intended to extend producer responsibility
- Typically involves an intermediary institution for “end of life” product collection and management
- Sometimes, linked to specific chemical phase outs
- European programs on packaging, vehicles, electronic products, etc.
- U.S. programs on bottles, batteries, tires, carpets, etc.

Paint Recovery

- Problem of unused and leftover paint stored for long periods of time in basements and garages
- Paint Product Stewardship Program started in 2003
- Goal: to reduce paint waste by:
 - **reducing generation of paint waste**
 - **Increasing reuse and recycling of leftover paint**
 - **Increasing markets for leftover paint**
 - **Generating financing for past and future end-of-life paint management**



Paint Product Stewardship Initiative

- Four national dialogues held by the Product Stewardship Institute involving 55 stakeholders
- Memorandum of Understanding signed in 2005
 - includes 11 projects at cost of \$1.2 million
 - begun April, 2005 to run for 18 months
 - resulting in information necessary to form national program



Chittendon Solid Waste District (CSWD)

Paint Recovery Program

- Chittendon, only urban county in Vermont
- In 2004, CSWD collected some 19,000 gallons of latex paint (38% of the Hazardous Waste Collection Program's waste stream by volume)
- Cost for management and disposal of latex paint in FY04 was about \$33,000

CSWD Paint Recovery Program

- CSWD worked with local vendor to transfer waste paint stock for reformulation
- Local firm manufactures and sells reformulated paint as “Local Color”
- 75% of paint has been sold at a net cost of 68 cents/gallon



2. Chemical Stewardship

- A strategic, long-term relationship in which a customer contracts with a service provider to supply and manage the customer's chemicals and related services
- Shifting the chemicals industry from a commodity to a service industry (**Dow Canada's "leased chemicals"**)
- Revenue based on performance metrics rather than sales
- Ashland Specialty Chemicals, BP and PPG have launched "Chemical Management Services" (CMS)

Chemical Management Services

- Types of CMS Providers
 - Chemical manufacturers with service offerings
 - Chemical distributors with service offerings
 - Stand alone chemical service providers
- CMS is promoted by Chemical Strategies Partnership (CSP), a San Francisco non-profit established to promote environmentally beneficial CMS

CMS at General Motors

- Programs in over 90% of plants worldwide
- Reduced number of chemicals used by 50% and decreased chemical suppliers from 10,000 to just 5
- Reduced volume of chemical use on average by 30%
- Total cost savings above 30%
- Reductions achieved over 6 years at one production facility:
 - **54% decrease in purge solvent use**
 - **77% decrease in paint stripper use**
 - **80% decrease in solvent masking**
 - **75% decrease in VOC emissions**



3. Community Stewardship

- Views local jurisdictions as energy and resource management districts
- Sets up citizen teams to educate the community on environmentally preferred purchasing
- Relies on intensive recycling programs and composting of yard organic wastes
- Global Action Plan promotes its municipal “Sustainable Lifestyle Campaign”
 - **ex: Seattle, San Jose, Chattanooga, Kansas City, Portland**

Sweden's Eco-municipalities

- 1983- begun as an experiment at Overtornea
- Requires that each municipality develop
 - a 3 year action plan,
 - provide employee and public training, and
 - conduct a series of resource and waste management demonstration projects
- Today, the National Association of Eco-municipalities (SeKom) boasts over 60 cities and towns (pop. 500,000 to 100)

Eco-municipalities at Work

- Lovikka (pop. 120) recycles 91% of its solid waste involving 23 different material types
- Eksjo (pop. 170,000) established over 200 neighborhood “eco-teams” to promote reduced purchasing, packaging avoidance, non-toxic products, product sharing, reuse, recycling, and composting
 - **Some eco-teams reduced per family household waste to under 50 pounds per year (U.S. average is 1,642 lbs/yr)**

Changing Patterns of Consumption To Promote Chemicals Policy

“People don’t waste what they don’t buy”

Consumer Sovereignty

- Who is the consumer?
- What is consumption?
- Individuals want to be buyers and users, not consumers
- Users make purchases
- Who makes purchase choices?
- “Institutional Buyers” make most purchase decisions

Types of Institutional Buyers as Consumers

- A. Government Procurement Programs
- B. Group Purchasing Organizations
- C. “Big Box” Retail Corporations and Retail Chain Suppliers

A. Government Procurement

- Federal government directly purchases more than \$200 billion in goods and services each year
- Federal government spends an additional \$240 billion for goods and services through indirect grants and contracts
- State and local governments purchase an addition \$1 trillion

A. Government Procurement Program

Massachusetts EPP Program

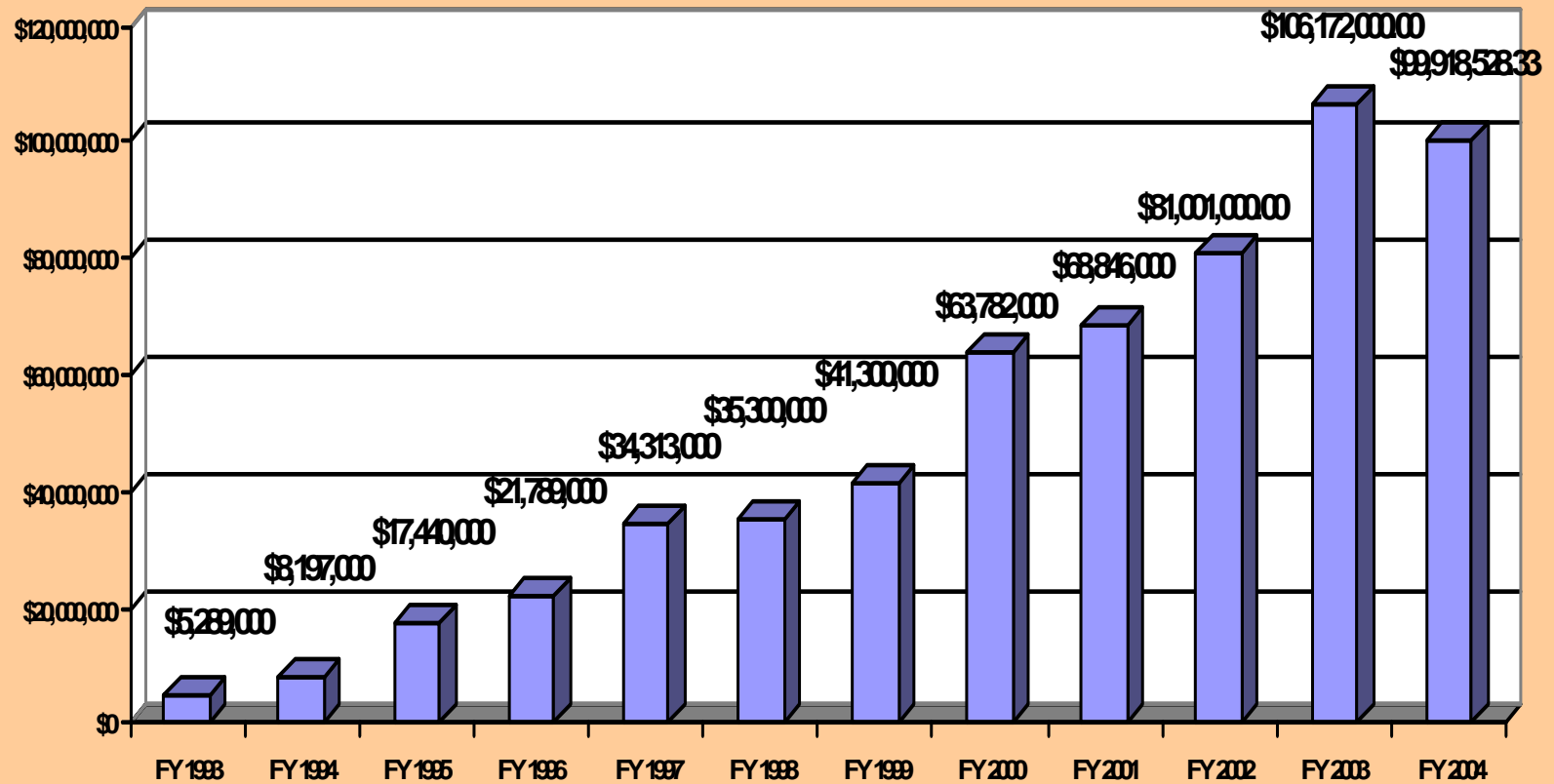
- Environmentally Preferred Purchasing Program established in 1994 by Massachusetts Operations Services Division
- Environmental criteria coordinated with National Association of State Purchasing Officers
- Massachusetts state government purchases some \$300 million in products each year



Massachusetts EPP

- EPP Program purchases by state agencies in FY2001 totaled \$92.5 million
 - **\$68.8 million in recycled-content purchases**
 - **\$21 million in recycled office printing paper**
- Program evaluation of 25 manufacturers found that the EPP Program
 - **Generated \$11.6 million in revenues and 33 permanent, full time jobs**

Growth in Massachusetts EPP



B. Group Purchasing Organizations

- Hospital GPOs
 - Premier, Novation, Consorta, Health Trust
 - Health Industry Group Purchasing Association
- Hotel GPOs
 - Higgins, Rausch, Benjamin West, Buy Efficient
- Academic GPOs
 - Inter University Council Purchasing Group,
Philadelphia Area Collegiate Cooperative

B. Group Purchasing Organization

Consorta

- A cooperatively held Group Purchasing Organization (GPO) for 13 Catholic health care systems
- Over 600 supplier agreements with annual purchase volume of \$4.1 billion



Consorta's Environmentally Preferred Purchasing Program

- Consorta contracts for environmentally preferred products that:
 - **Do not contribute to other health issues.**
 - **Are manufactured by companies that are committed to reducing the manufacturing waste stream.**
 - **Combine environmentally friendly features with economy.**
 - **Are of high quality.**
 - **Offer the same or better functionality than current products.**
 - **Are readily and reliably available at reasonable prices.**

Consorta's Environmentally Preferred Purchasing Program

- Established a list of chemicals of concern and requires disclosure of their presence in products when evaluating potential suppliers
- In 5 years, Consorta has negotiated 67 contracts for “environmentally preferred products”
 - **eliminating mercury containing products**
 - **requiring labeling of PVC-containing products**

C. Large Retail Corporations

- 20 retail chains in the U.S. with revenues over \$15 billion per year
- Sheer size of purchasing can rapidly swing product markets

	Revenue/yr	# of Stores
Wal-Mart	\$288 million	5,189
Home Depot	\$73 million	1,890
Kroger	\$56 million	3,763

C. “Big Box” Retail Corporation

Wal-Mart

- 5,189 stores (3,800 stores in the U.S.)
- 100 million customers
- 68.000 suppliers
- U.S. sourced health and personal care products takes up 1/4 aggregate floor space
- Apparel takes up 1/4 aggregate floor space primary sourced from Latin America and China

The Wal-Mart logo, featuring the words "WAL" and "MART" in a bold, sans-serif font, separated by a five-pointed star. A small trademark symbol (TM) is located at the end of the word "MART".

Wal-Mart's Environmental Program

“Wal-Mart encourages its suppliers to reduce excess packaging and to use recycled and non-toxic materials whenever possible.”

- Established 13 advisory “Sustainable Value Networks” working on sustainable packaging, wood, produce, electronics, and “elimination of substances of concern”
- Developing incentive plans for suppliers and scorecards for merchandise buyers

Wal-Mart's Organics

- Started with organic yoga cotton apparel and soon moved into organic bath, bed and baby products
- Experimenting with over 400 organic foods
- Organic Exchange claims that the Wal-Mart program has saved 500,000 pounds of biocides and made Wal-Mart the world's largest purchaser of organic cotton



Chemicals Policy and Product Policy

- Chemicals policy requires a more comprehensive approach to chemicals in products
- The most effective way to reduce the generation of domestic hazardous waste is to re-engineer our consumption systems
- Product, chemical and community stewardship programs should focus on “closing the loop”
- Governments should partner with Institutional Buyers to increase environmentally preferred purchase decisions